

CLAIMS

- 1 1. A continuous, in-line process for making an ink-jet recording medium,
2 comprising the steps of:
 - 3 a) applying a radiation-curable coating to a surface of a substrate material,
 - 4 b) irradiating the radiation-curable coating so that the coating undergoes a
5 curing process, and
 - 6 c) applying an ink-receptive coating over the irradiated coating to form an
7 ink-jet recording medium having a water vapor transmission rate of no
8 greater than 12 grams / 100 square inches / 24 hours and a surface gloss of
9 at least 70.
- 1 2. The process of claim 1, wherein the radiation-curable coating is irradiated with
2 ultraviolet light.
- 1 3. The process of claim 1, wherein the radiation-curable coating is irradiated with
2 electron beam radiation.
- 1 4. The process of claim 1, further comprising the step of treating the irradiated
2 coating with a corona discharge prior to applying the ink-receptive coating.
- 1 5. The process of claim 1, further comprising the step of applying a coating
2 comprising adhesion promoters over the irradiated coating prior to applying the
3 ink-receptive coating.
- 1 6. The process of claim 1, wherein the continuous, in-line process runs at a speed
2 of at least about 60 feet per minute.

1 7. The process of claim 1, wherein the radiation-curable coating comprises a
2 radiation-curable oligomer and photoinitiator.

3 8. The process of claim 1, wherein the ink-receptive coating comprises at least
4 about 40% by weight water-soluble binder resin based on dry weight of the ink-
5 receptive layer.

1 9. The process of claim 8, wherein the water-soluble binder resin is selected from
2 the group consisting of polyvinyl alcohols; poly(vinyl pyrrolidone); poly(2-ethyl-
3 2-oxazoline); methylcellulose; poly(ethylene oxide); and copolymers and mixtures
4 thereof.

1 10. The process of claim 1, wherein the weight of the irradiated coating is in the
2 range of about 1 to about 40 grams / square meter.

1 11. The process of claim 1, wherein the weight of the ink-receptive coating is in
2 the range of about 5 to about 50 grams / square meter.

1 12. A continuous, in-line process for making an ink-jet recording medium,
2 comprising the steps of:

- 3 a) applying a radiation-curable coating to a surface of a substrate material,
- 4 b) irradiating the radiation-curable coating so that the coating undergoes a
5 curing process, and
- 6 c) applying an ink-receptive coating over the irradiated coating to form an
7 ink-jet recording medium having a water vapor transmission rate of no
8 greater than 12 grams / 100 square inches / 24 hours and a surface gloss in
9 the range of 20 to 70.

1 13. A continuous, in-line process for making an ink-jet recording medium,
2 comprising the steps of:

- 3 a) applying a radiation-curable coating to a surface of a substrate material,
4 b) irradiating the radiation-curable coating so that the coating undergoes a
5 curing process, and
6 c) applying an ink-receptive coating over the irradiated coating to form an
7 ink-jet recording medium having a water vapor transmission rate of no
8 greater than 12 grams / 100 square inches / 24 hours and a surface gloss
9 less than 20.